TRANSMITTAL OF APPEAL BRIEF (Large Entity)	Docket No. ITL.0462US

In Re Application Of: **Kannan Raj, et al.**

Application No.	Filing Date	Examiner	Customer No.	Group Art Unit	Confirmation No.
09/839,023	April 20, 2001	Dalzid E. Singh	47795	2613	2391

Invention: **Optically Interconnecting Multiple Processors**

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Dated: **July 31, 2008**

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Applicant:	Kannan Raj et al.	§	Art Unit:	2613
Serial No.:	09/839,023	§	Examiner:	Dalzid E. Singh
Filed:	April 20, 2001	§	Docket:	ITL.0462US P9816
For:	Optically Interconnecting Multiple Processors	§	Assignee:	Intel Corporation

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APPEAL BRIEF

08/04/2008 MGEBREM1 00000072 09839023
01 FC:1402 510.00 OP

Adjustment date: 08/04/2008 MGEBREM1
12/18/2006 HVUONG1 00000050 09839023
01 FC:1402 -500.00 OP

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Nancy Meshkoff

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REAL PARTY IN INTEREST

The real party in interest is the assignee Intel Corporation.

RELATED APPEALS AND INTERFERENCES

None.

STATUS OF CLAIMS

Claims 1-4 (Rejected).

Claims 5-6 (Canceled).

Claims 7-15 (Rejected).

Claim 16 (Canceled).

Claims 17-30 (Rejected).

Claims 1-4, 7-15, and 17-30 are rejected and are the subject of this Appeal Brief.

STATUS OF AMENDMENTS

No reply was made to the Final Rejection mailed on April 3, 2008. All amendments have therefore been entered.

SUMMARY OF CLAIMED SUBJECT MATTER

In the following discussion, the independent claims are read on one of many possible embodiments without limiting the claims:

1. A multiprocessor device comprising:

at least three interconnected optical transceivers (transceiver 22 in Figure 2 [next page] is within multiplexers 13a-d in Figure 1 [below]) for direct communication between said transceivers (specification at page 5, lines 8-19); and

at least three processors (12a, 12b, 12c, Figure 1), each processor (12, Figure 1) coupled to one transceiver (22, Figure 2), each transceiver (22, Figure 2) including a wavelength division multiplexer (13, Figure 1) to enable optical communications with the other processors, each transceiver to notify a first of the three transceivers when a second of the three transceivers is receiving a signal from a third of the three transceivers (specification at page 8, line 20-page 9, line 3).

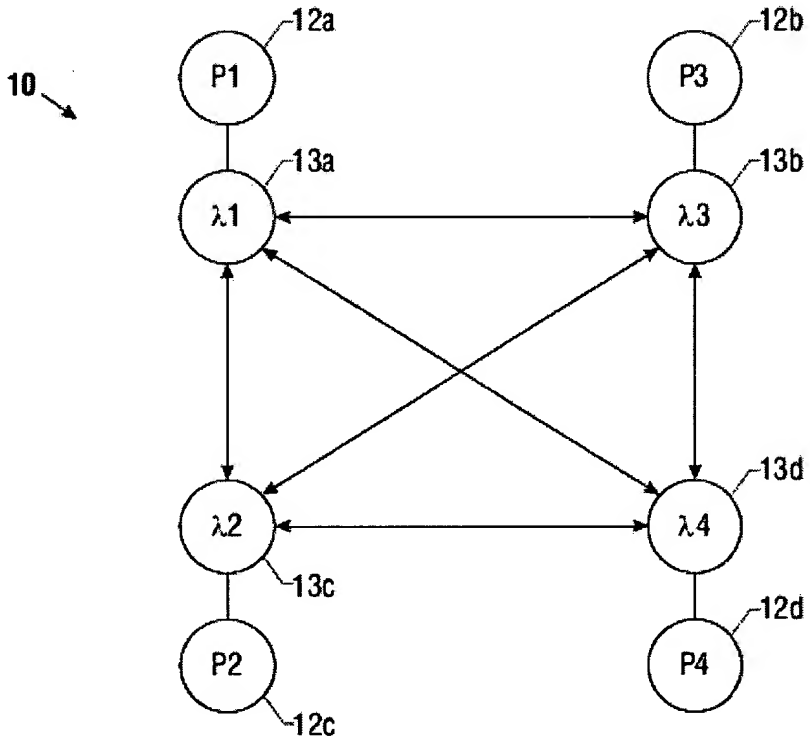

FIG. 1

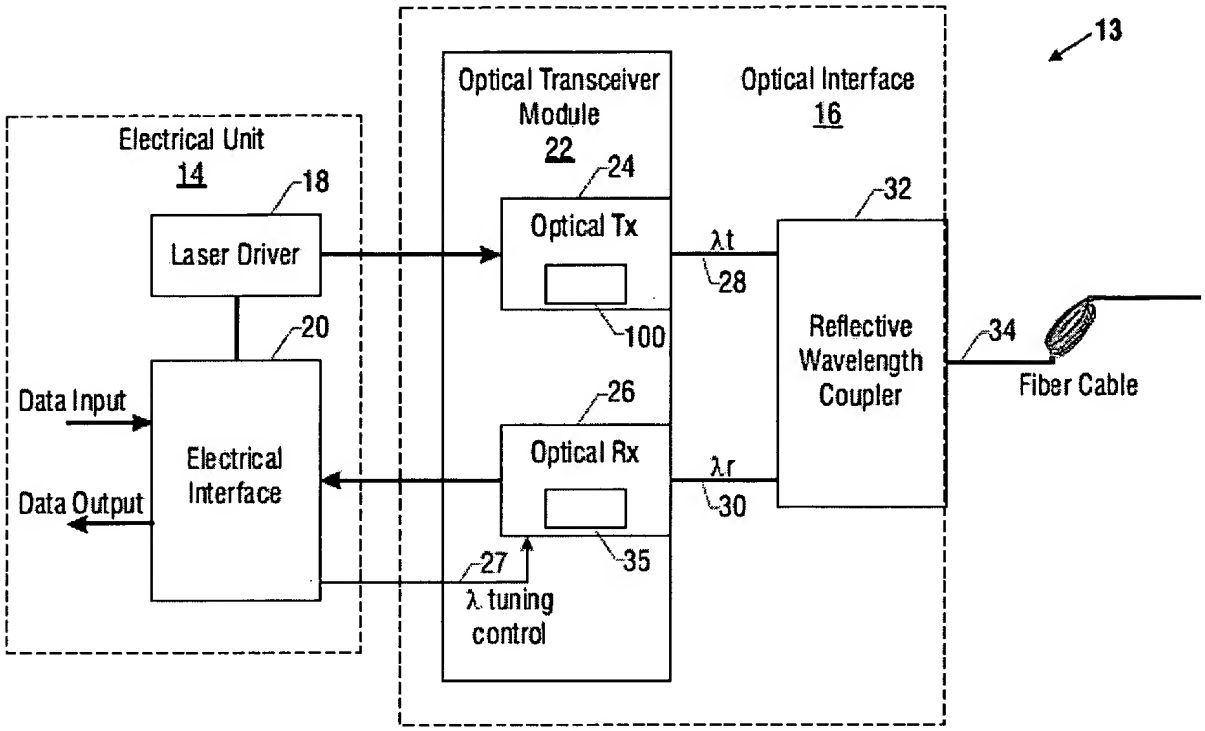

FIG. 2

11. A method comprising:

establishing a multiprocessor device including at least three directly interconnected systems, each system including a processor (12a, 12b, 12c, Figure 1) and an optical transceiver (22, Figure 2);

enabling optical communications between said systems using wavelength division multiplexing (specification at page 3, lines 16-26); and

notifying a first system when a second system is receiving an optical communication from a third system (specification at page 8, line 20-page 9, line 3).

21. A computer-readable medium storing instructions that enable a first processor-based system of a multiprocessor-based device including a second processor-based system and a third processor-based system to:

identify a light communication from a second processor-based system intended for said first processor-based system (specification at page 4, lines 13-25);

tune to said wavelength (specification at page 4, lines 13-25); and

notify a first processor when a second processor is receiving an optical communication from a third processor (specification at page 8, line 20-page 9, line 3).

At this point, no issue has been raised that would suggest that the words in the claims have any meaning other than their ordinary meanings. Nothing in this section should be taken as an indication that any claim term has a meaning other than its ordinary meaning.

GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

A. **Whether claims 1-4, 7-15, and 17-30 fail to comply with the written description requirement under 35 U.S.C. § 112, first paragraph.**

B. **Whether claims 1-4 and 7-10 are based on a disclosure which is not enabling under 35 U.S.C. § 112, first paragraph.**

C. **Whether claims 1-4 and 7-10 are indefinite under 35 U.S.C. § 112, second paragraph for failing to point out and distinctly claim the subject matter of the invention.**

D. **Whether claims 1-4 and 7-12 are anticipated under 35 U.S.C. § 102(e) by Deri (US 6,411,418).**

E. **Whether claims 1-4, 9, and 10 are unpatentable under 35 U.S.C. § 103(a) over Nakata (US 5,500,857) in view of Li (US 6,385,371) and further in view of Asahi (US 6,195,186) or Mo (US 6,693,909).**

F. **Whether claims 7 and 8 are unpatentable under 35 U.S.C. § 103(a) over Nakata (US 5,500,857) in view of Li (US 6,385,371) and further in view of Huber (US 6,687,428).**

G. **Whether claims 11-15 and 17-30 are unpatentable under 35 U.S.C. § 103(a) over Nakata (US 5,500,857) in view of Asahi (US 6,195,186) or Mo (US 6,693,909)**

ARGUMENT

A. Whether claims 1-4, 7-15, and 17-30 fail to comply with the written description requirement under 35 U.S.C. § 112, first paragraph.

The Section 112 rejection (contained in paragraph 2 concerning claim 1) asserts that there is no support for "each transceiver to notify a first of three transceivers, when a second of the three transceivers is receiving a signal from a third of the three transceivers". Support is provided in the specification at page 4, lines 1-4 and page 5, lines 8-19.

The material at page 4 explains that processors communicate with the other processors through multiplexers 13. The material at page 5 explains that multiplexers 13 include the electrical unit 14 and optical interface 16. The optical transceiver module 22 is part of the optical interface 16. Thus clearly all communication between processors 12 is also necessarily through transceivers 22.

The rejection of claim 11 in the same paragraph of the Office Action asserts that there is no support for "...notifying a first system when a second system is receiving an optical communication from a third system." Support may be found at page 8, lines 23-25. The same material supports claim 21.

With respect to the argument on page 3 of the final rejection that the language in the specification talks about communication between processors, rather than transceivers, it should be noted that page 5, lines 1-4 and the figures make it clear that all communications between the processors is done through the optical interfaces 16, which would constitute the claimed transceivers as clearly shown in Figure 2. There is no other way that Figure 1 could possibly operate.

Therefore these rejections should be reversed.

B. Whether claims 1-4 and 7-10 are based on a disclosure which is not enabling under 35 U.S.C. § 112, first paragraph.

With respect to the rejection set forth in paragraph 3, to the extent it is understood, it is believed that it is addressed by the argument set forth in Section A.

C. Whether claims 1-4 and 7-10 are indefinite under 35 U.S.C. § 112, second paragraph for failing to point out and distinctly claim the subject matter of the invention.

The rejection set forth in paragraph 5 of the final rejection concerns the difference between a device and a system. The assertion that there is some established difference in meaning between device and system is noted, but it is believed that there is no basis for such a difference. A system is still a device and a device may still be a system. Therefore, there is no reason that the language utilized is not appropriate.

It is respectfully submitted that the suggestion that one skilled in the art would have trouble understanding what a device or system means should be reconsidered. There is no need to define terms of this ilk in the specification for anyone skilled in the art.

D. Whether claims 1-4 and 7-12 are anticipated under 35 U.S.C. § 102(e) by Deri (US 6,411,418).

With respect to the rejection set forth in paragraph 9, based on the Deri reference, it is asserted that an optical transceiver including a wavelength division multiplexer enables optical communication with other two transceivers, at page 7 of the office action. Even if we were to assume *arguendo* that this is true, it fails to meet the limitations of the claims. It is not required that the applicant search the reference to attempt to see what the basis for the rejection is. Instead, it is required that each element of the claims be addressed. That has not occurred here and it is respectfully submitted that a *prima facie* rejection is not made out as a result.

E. Whether claims 1-4, 9, and 10 are unpatentable under 35 U.S.C. § 103(a) over Nakata (US 5,500,857) in view of Li (US 6,385,371) and further in view of Asahi (US 6,195,186) or Mo (US 6,693,909).

Claim 1 calls for notifying a first of three processors when a second of the three processors is receiving a signal from the third of the three processors. This last element is rejected based on the teaching in column 17, lines 27-52 of Nakata. However, that material does not involve any communication between nodes (which are alleged in the office action to be processors). Instead, it merely relates to the assignment of the wavelength for a subsequent transmission.

The claim requires that a first processor be notified when a second of three processors is receiving a signal from a third of three processors. The assignment of the wavelength involves no communication. There is no signal between second and third nodes. The first sentence of the cited language in column 17 makes it clear that what is being talked about here is the assignment of wavelengths before any communication. As indicated at lines 35 and 36, a node extracts a free wavelength and updates the wavelength management table. Clearly, this involves no communication between two nodes. When a wavelength is in use, the bit assigned is set to one for that wavelength. See column 17, lines 41 and 42. Thus, there is no situation where when a second and third nodes are communicating, a first node is notified. At most what would happen in the situation cited in the passage relied upon, is that one node obtains a wavelength and the bit associated with that wavelength is changed in status. That bit change is not communicated to any other node. There is no communication between two processors.

In short, a selection of an available wavelength is done entirely by one node all by itself. It can do this by receiving the wavelength table selecting an unused wavelength and changing that wavelength to used status. No communication is required. No notification is provided to any other node in response to receiving a communication. All that is done is the table setting is changed, but this is not necessarily communicated to anyone else. It simply resides in the table and goes nowhere. There is no notification of a first of three processors when a second of three processors is receiving a signal from a third of the three processors. Moreover, the wavelength management table does not constitute a signal, but is merely data. The reference itself is clear that the signal that is transmitted is after setting up the appropriate wavelength using the wavelength management table. See, for example, column 18, lines 26-32.

F. Whether claims 7 and 8 are unpatentable under 35 U.S.C. § 103(a) over Nakata (US 5,500,857) in view of Li (US 6,385,371) and further in view of Huber (US 6,687,428).

For the reasons set forth in Section E, this rejection should be reversed.

G. Whether claims 11-15 and 17-30 are unpatentable under 35 U.S.C. § 103(a) over Nakata (US 5,500,857) in view of Asahi (US 6,195,186) or Mo (US 6,693,909)

For the reasons set forth in Section E, this rejection should be reversed.

* * *

Applicant respectfully requests that each of the final rejections be reversed and that the claims subject to this Appeal be allowed to issue.

Respectfully submitted,

Date: July 31, 2008

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CLAIMS APPENDIX

The claims on appeal are:

1. A multiprocessor device comprising:

at least three interconnected optical transceivers for direct communication between said transceivers; and

at least three processors, each processor coupled to one transceiver, each transceiver including a wavelength division multiplexer to enable optical communications with the other processors, each transceiver to notify a first of the three transceivers when a second of the three transceivers is receiving a signal from a third of the three transceivers.

2. The device of claim 1 wherein each transceiver includes an optical transmitter including a laser.

3. The device of claim 1 wherein each transceiver includes an optical receiver tunable to a particular input wavelength.

4. The device of claim 1 wherein each transceiver is assigned a wavelength for communicating with the other processors.

7. The device of claim 1 wherein said transceiver includes a dispersive element to disperse light reflected by said reflector.

8. The device of claim 7 wherein said dispersive element includes a microelectromechanical structure.

9. The device of claim 1 wherein each transceiver transmits a light beam together with a code identifying a sending and a receiving processor.

10. The device of claim 1 wherein, when one transceiver is receiving a wavelength division multiplexed signal from another transceiver, the one transceiver broadcasts to all other transceivers that the one transceiver is busy.

11. A method comprising:

establishing a multiprocessor device including at least three directly interconnected systems, each system including a processor and an optical transceiver;

enabling optical communications between said systems using wavelength division multiplexing; and

notifying a first system when a second system is receiving an optical communication from a third system.

12. The method of claim 11 including assigning a unique wavelength to each of said processors.

13. The method of claim 11 including scanning for the wavelengths of any of said other processors.

14. The method of claim 13 including transmitting a light beam having a predetermined wavelength, and transmitting a code that identifies the transmitting system and the intended receiving system.

15. The method of claim 14 wherein the receiving system identifies the wavelength of the incoming beam and the code accompanying said beam, and locks to the wavelength of the transmitting system.

17. The method of claim 15 including broadcasting the fact that the second system is receiving a beam to all other systems in the device.

18. The method of claim 17 indicating when said second system is no longer communicating with said third system.

19. The method of claim 11 including using a code transmitted by the third system to determine if a given system is the intended recipient of a beam transmitted from the third system.

20. The method of claim 11 including optically interconnecting each of said systems.

21. A computer readable medium storing instructions that enable a first processor-based system of a multiprocessor-based device including a second processor-based system and a third processor-based system to:

identify a light communication from a second processor-based system intended for said first processor-based system;

tune to said wavelength; and

notify a first processor when a second processor is receiving an optical communication from a third processor.

22. The medium of claim 21 further storing instructions that enable the first processor-based system to scan through a plurality of wavelengths of other processor-based systems to identify a signal intended for said first processor-based system.

23. The medium of claim 21 further storing instructions that enable the first processor-based system to receive a code that indicates whether a given light communication is intended to be sent to said first processor-based system.

24. The medium of claim 23 further storing instructions that enable said first processor-based system to tune to said wavelength to the exclusion of other wavelengths.

25. The medium of claim 24 further storing instructions that enable said first processor-based system to broadcast a signal indicating that said first processor-based system is tuned exclusively to said wavelength.

26. The medium of claim 25 further storing instructions that enable the first processor-based system to notify a third processor-based system when said first processor-based system is no longer engaged in a communication with said second processor-based system.

27. The medium of claim 21 further storing instructions that enable said first processor-based system to identify a second processor-based system to communicate with and to determine whether said second processor-based system is currently occupied with a communication with another processor-based system.

28. The medium of claim 21 further storing instructions that enable said first processor-based system to communicate with at least two other processor-based systems using optical communications and wavelength division multiplexing.

29. The medium of claim 28 further storing instructions that enable said first processor-based system to communicate with other processor-based systems using an assigned wavelength.

30. The medium of claim 29 further storing instructions that enable said first processor-based system to transmit a code that identifies said first processor-based system and an intended receiving processor-based system.

EVIDENCE APPENDIX

None.

RELATED PROCEEDINGS APPENDIX

None.